

STUDIES IN AMERICAN MANTIDS OR SOOTHISAYERS.

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The specimens treated in the following pages are contained in the collections of the United States National Museum and the Academy of Natural Sciences of Philadelphia. The greater part of the material is from the Costa Rican collection of Messrs. Schild and Burgdorf, and the Cuban collection made by Messrs. Palmer and Riley.

The author wishes to thank Dr. W. H. Ashmead of the United States National Museum for the privilege of examining the material from the collections under his charge.

Subfamily ORTHODERINÆ.

Genus CHÆRADODIS Serville.

1831. *Chæradodis* SERVILLE, Ann. Sci. Nat., XXII, p. 50.

Included *strumaria* (Fabricius), *hyalina* (Stoll), and *laticollis* Serville.

CHÆRADODIS RHOMBICOLLIS (Latreille).

1833. *Mantis rhombicollis* LATREILLE, in Humboldt and Bonpland, Rec. Observ. Zool., II, p. 103, pl. xxxix, figs. 2 and 3; Equatorial America.

One male; San Juan del Norte, Nicaragua. [U.S.N.M.]

Subfamily MANTINÆ.

Genus ACONTISTA Saussure.

1838. *Acontistes* BURMEISTER, Handb. der Entom., II, p. 542. (Not of Sundevall, 1835.)

1870. *Acontista* SAUSSURE, in Mélang. Orthoptérol., Pt. 3, p. 175.

Type.—*Mantis tricolor* Burmeister = *Mantis concinna* Perty.^a

^aThe originally included species were as follows:

sancta—*Stagmatoptera*.

supplicaria—*Stagmatoptera*.

cingulata—*Thecoctyles*.

tricolor.

prasina—*Calidomantis* (*Miomantis* auct.).

The type is seen to be *tricolor* (= *concinna* Perty), the only uneliminated species.

ACONTISTA MEXICANA Saussure and Zehntner.

1894. *Acontista mexicana* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., I, p. 135; Cordova, Atoyac, Guerrero, Mexico; Chontales, Nicaragua; Bugaba (800-1,500 feet), Volcan de Chiriqui (2,000-3,000 feet), Panama.

Two females; Piedras Negras and Turrialba, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

The specimen from Turrialba is quite different from the other individual in the intensity of the coloration, but the pattern is almost identical. Even after due consideration of the importance of color characters in this genus, I have no hesitation in referring it to *mexicana*, but to aid future workers I have appended a description of the coloration.

General color dull lemon yellow, the tegmina with several very obscure diagonal streaks of pale brownish. Eyes pale wood brown. Wings with the basal portion of the posterior field bright lemon, which color also suffuses two-thirds of the anterior field; band of the wing dark chocolate, equal to half the length on the posterior field, narrowing to a rather small blotch on the anterior field, and not reaching the costal margin; apex of the wing and half of the periphery of the posterior field pellucid, widest toward the costal margin, gradually narrowing and vanishing posteriorly.

ACONTISTA FRATERNA Saussure and Zehntner.

1894. *Acontista fraterna* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., I, p. 136; Caché, Costa Rica.

One female; Tucurrique, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

ACONTISTA VITREA Saussure and Zehntner.

1894. *Acontista vitrea* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., I, p. 138, pl. vi, fig. 9; Atoyac, Mexico; Costa Rica; Volcan de Chiriqui (2,000-3,000 feet), Panama.

Two males; Piedras Negras, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

As suggested by the original describers^a this species probably represents the male of *A. fraterna*.

Genus STAGMOMANTIS Saussure.

1869. *Stagmomantis* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 56.

Type.—*Gryllus carolinus* Linnaeus.^b

^a Biol. Cent.-Amer., Orth., I, p. 136.

^b Originally included species; *carolina*, *tolteca*, *stollii*, *ferox*, *domingensis*, *nahua*, and *azteca*. As none of these have been eliminated, *carolina* may be selected as the type.

STAGMOMANTIS NAHUA Saussure.

1869. *St[agnomantis] nahua* SAUSSURE, Bull. Soc. Entom. Suisse, 111, p. 65; Mexico.

One male; San José, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

STAGMOMANTIS HETEROGAMIA Saussure and Zehntner.

1894. *Stagnomantis heterogamia* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., 1, p. 142, pl. VII, figs. 2 and 3; Bugaba (800-1500 feet), Panama.

Three males; Tucurrique, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

STAGMOMANTIS THEOPHILA, new species.

Type.—Male; Turrialba, Costa Rica. (Schild and Burgdorf.) [Cat. No. 6952, U.S.N.M.]

Allied to *S. venusta* and *S. heterogamia* Saussure and Zehntner,^a but differing from both in the much greater size, the denticulate margins of the pronotum, and in the absence of fuscous maculations on the tegmina and wings.

Size rather large; form elongate and slender. Head considerably broader than deep; eyes ovoid when viewed laterally; facial shield strongly transverse, obtuse angulate; ocelli closely placed; antennae extending somewhat beyond the posterior margin of the pronotum. Pronotum with the collar broader than any portion of the shaft, the latter strongly compressed centrally, the longitudinal median carina faint and not visible on the posterior third; supracoxal dilations not strongly marked; margins of the collar, lobes, and anterior half of the shaft with well-marked denticles. Tegmina transparent, elongate, slightly exceeding the abdomen in length; sutural and costal margins subparallel, apex subangulate; costal field comparatively wide, of appreciable width for about half the length of the tegmina, surface sparsely and irregularly reticulate; stigma transparent and hardly visible. Wings elongate, slightly exceeding the tegmina in length when in repose, transparent. Abdomen elongate, slender, very considerably depressed. Supra-anal plate small, triangular, apex rounded. Cerci exceeding the subgenital plate in length, very strongly depressed; apex rather blunt. Subgenital plate rather large, triangularly produced; apex narrowly truncate and supplied with two very minute, simple styles. Anterior coxæ supplied with five or six large denticiform spines on the lower margin; femora rather slender, exceeding the coxæ by over one-fourth of their length, external margin bearing four large spines, discoidal spines four in number; apical half of the internal margin bearing a continuous row of alternating large and small spines; tibiae about equal to half the length of the femora, spines

^aBiol. Cent.-Amer., Orth., 1, pp. 142 and 145.

on the external margin eleven or twelve in number, increasing in size toward the apex, the basal portion of the margin unarmed, internal margin with thirteen or fourteen spines, the series continuing to the proximal portion of the joint; tarsi very slender, metatarsi exceeding the other joints in length and but slightly shorter than the tibia (without apical claw). Median and posterior limbs slender; metatarsi of the median limbs shorter than the remaining joints, of the posterior limbs subequal. General color pale pea green, becoming brownish on the pronotum. Eyes, antennæ, and coxal spines rich wood brown. Tegmina hyaline, the costal margin with a faint greenish-white suffusion, the region of the anterior radial vein bearing a line of pale pea green. Wings hyaline, costal margin with a very pale suffusion of pea green. Cerci and median and posterior tarsal joints (exclusive of the metatarsi) wood brown.

MEASUREMENTS.

	<i>mm.</i>
Length of body	60.0
Length of pronotum	19.5
Greatest width of pronotum	3.5
Length of tegmina	39.5
Greatest width of tegmina	9.5
Length of anterior femora	12.5

STAGMOMANTIS TOLTECA (Saussure)?

1861. *Mantis (Stagmatoptera) tolteca* SAUSSURE, Revue et Magasin de Zoologie, 2d ser., XIII, p. 127; Tropical Mexico.

Four males; Panama. Piedras Negras and Turrialba, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

These specimens are rather doubtfully assigned to this species, as the males of this section of the genus resemble one another very much.

STAGMOMANTIS DIMIDIATA (Burmeister).

1838. *Mantis dimidiata* BURMEISTER, Handb. d. Entom., II, p. 539; South America.

One female; San José, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

STAGMOMANTIS LIMBATA (Hahn).

"1835. *Mantis limbata* HAHN, Icones ad Mon. Cimic., I, t. A, fig. 2; Mexico."

Five specimens; two males, three females; Mexico. Durango, Mexico; July, 1896. (Dr. E. Palmer.) [U.S.N.M.] Mazatlan, Mexico. (W. W. Lockington.) [A. N. S. Phila.]

STAGMOMANTIS DOMINGENSIS (Beauvois).

1805. *Mantis domingensis* BEAUVOIS, Ins. Rec. d'Afr. et d'Amér., p. 61, pl. VII, fig. 2; Santo Domingo.

Two males, two females; Baracoa, Cuba. February 4, 1902. (Wm. Palmer.) [U. S. N. M.] Haiti. [A. N. S. Phila.]

The female specimen from Haiti is a perfectly typical individual, with the transverse callous stigma, while the Cuban female is slightly smaller, with the anterior femora comparatively weaker and the stigma smaller and ovate. The two males from Haiti are identical in form and coloration.

Genus CALLIMANTIS Stål.

1877. *Callimantis* STÅL, Bihang till K. Svenska Vet.-Akad. Handlingar, IV, no. 10, p. 39.

Type.—*Callimantis antillarum* (Saussure).

CALLIMANTIS ANTILLARUM (Saussure).

1859. *M[antis] antillarum*, SAUSSURE, Revue et Magasin de Zoologie, 2d ser., XI, p. 60; St. Thomas.

One female; Haiti. [A. N. S. Phila.] This species has previously been recorded from St. Thomas, Santo Domingo, Culebra Island, and Botafogo, near Rio de Janeiro, Brazil. The latter locality appears rather questionable.

Genus LITANEUTRIA Saussure.

1892. *Litaneutria* SAUSSURE, Societas Entomologica, VII, p. 123.

Type.—*L. ocularis* Saussure.

LITANEUTRIA MINOR (Scudder).

1872. *Stagmatoptera minor* SCUDDER, Rep. U. S. Geol. Surv. Nebraska, p. 251; Nebraska City, Nebraska.

One female; Casas Grandes, Chihuahua, Mexico. September, 1902. (Dr. W. E. Hughes.) [A. N. S. Phila.] This is the first Mexican record for this species.

Genus ANGELA Serville.

1839. *Angela* SERVILLE, Orthoptères, p. 171.

Originally included *quinquemaculata*, *versicolor*, *infumata*, and *brachyptera*. Of these, *brachyptera* may be selected as the type.^a

^aAs the generic name *Thespis* Serville (Ann. Sci. Nat., XXII, 1831, p. 54) is closely involved with *Angela*, the type of the former is seen on elimination to be *parva* (Olivier).

purpurascens—*Angela*, 1839.

fasciata—*Tenodera*, 1838.

quinquemaculata—*Angela*, 1839.

parva.

ANGELA PERPULCHRA Westwood.

1889. *Angela perpulchra* WESTWOOD, Rev. Ins. Fam. Mantid., p. 30; Nicaragua.

Two females; Carillo and Tucurrique, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.] One of these specimens has the disk of the wings sulphur yellow; the other has the same area very pale greenish white.

Genus MIOPTERYX Saussure.

1870. *Miopteryx* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 236.

Type.—By elimination and selection, *M. granadensis* Saussure.^a

MIOPTERYX GRANADENSIS Saussure.

1870. *M*[*iopteryx*] *granadensis* SAUSSURE, Bull. Soc. Entom. Suisse, III, p. 237; Bogota.

Four specimens; Bartica, British Guiana. April 24 and May 4, 7, and 11, 1901. (R. J. Crew.) [A. N. S. Phila.]

Genus PSEUDOMIOPTERYX Saussure.

1870. *Pseudomiopteryx* SAUSSURE, Bull. Soc. Entom. Suisse, III, pp. 225, 228.

Included *P. spinifrons* and *P. bogotensis* Saussure.

PSEUDOMIOPTERYX INFUSCATA Saussure and Zehntner.

1894. *Pseudomiopteryx infuscata* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., I, p. 163; Presidio, Cordova, Mexico; San Juan, Las Mercedes (3,000 feet), Volcan de Atitlan (2,500–3,500 feet), Zapote, Guatemala; Chontales, Nicaragua; Bugaba (800–1,500 feet), Caldera (1,200 feet), and Volcan de Chiriqui (2,500–4,000 feet), Panama.

Four specimens; three males, one female; Piedras Negras, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

As the female has never been described, some notes on this specimen may be of interest.

Size, rather small; surface rugulose. Head slightly broader than deep; eyes, rotundate-ovate when viewed laterally; vertex raised above the eyes, straight, the juxta-ocular lobes rounded and but slightly separated from the other portion of the vertex; ocelli disposed in a low triangle; facial shield transverse, the superior margin very broadly obtuse-angulate. Pronotum rather stout; collar narrow; supra-coxal dilations rectangulate; anterior and lateral margins denticulate except for a small basal portion of the latter; dorsal aspect

^a The genus originally comprised the following species:

granadensis.

argentina.

madagascarensis—*Platycalymma* Westwood.

lactea—*Nanomantis* Saussure.

pellucida—*Calidomantis* Rehn (= *Miomantis* Saussure).

with two pairs of short dentiform processes on the collar and two pairs on the shaft, one pair placed anteriorly and wide apart, the other median and close together, posterior margin with a median process; longitudinal carina present on the shaft, most apparent posteriorly. Tegmina and wings hardly visible. Abdomen fusiform, depressed. Supra-anal plate produced, triangular, apex acute angulate, lateral margins slightly arcuate, dorsal surface longitudinally carinate. Cerci small, not exceeding the supra-anal plate in length, depressed. Subgenital plate compressed, produced, not equaling the supra-anal plate in length, apex developed into a little rounded knob. Anterior coxæ slightly exceeding the pronotum in length, lower margins both supplied through their entire length with dentiform spines, those of the internal margin being decidedly the smaller; femora very stout and heavy, external margin with five spines, one of which is apical, discoidal spines three in number; tibiae about half the length of the femora, external and internal borders bearing eight spines, which increase in size toward the apical claw; metatarsi exceeding the remaining tarsal joints in length. Median and posterior limbs slender.

General color brownish black, becoming very dull rufescent on the internal faces of the anterior coxæ; limbs obscurely mottled and annulate with dull ochraceous.

MEASUREMENTS.

Total length	mm. 20
Length of pronotum.....	5.5
Greatest width of pronotum.....	3
Greatest width of abdomen	5.7

Genus PARAMUSONIA, new name.

1894. *Musonia* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., I, p. 64 (not of Stål, 1877).^a

Type.—By selection, *Thespis cubensis* Saussure.

PARAMUSONIA CUBENSIS (Saussure).

1869. *Th[espis] cubensis* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 70; Cuba.

One male; Pinar del Rio, Cuba. March 27, 1900. (Palmer and Riley.) [U.S.N.M.]

^a Stål's genus *Musonia* (Bihang till K. Svenska Vet. Akad. Handlingar, IV, no. 10, p. 45), contained but two species—*surinamæ* Saussure and *lineativentris* Stål. Both of these were placed in *Mionyx* by Saussure and Zehntner (Biol. Cent. Amer., Orth., I, pp. 166-167). As no included species are given in the original of *Mionyx* (Societas Entomologica, VII, 1892, p. 122), the treatment in the Biologia is the first to give us any of the included species. Thus *Mionyx* Saussure becomes a synonym of *Musonia* Stål, while a new name is required for the *Musonia* of Saussure and Zehntner.

Genus MUSONIA Stål.

1877. *Musonina* STÅL, Bihang till K. Sven. Vet. Akad. Handlingar, IV, no. 10, p. 45.

Type.—Of the two originally included species *surinama* may be considered the type.

MUSONIA SURINAMA (Saussure).

1869. *Thespis surinama* SAUSSURE, Bull. Soc. Entom. Suisse, III, p. 70; Surinam. One male; Trinidad. [A.N.S.Phila.]

Genus HARPAGONYX Saussure.

1892. *Harpagonyx* SAUSSURE, Societas Entomologica, VII, p. 122.

Type.—By selection, *H. gryps* Saussure and Zehntner.^a

HARPAGONYX CARLOTTÆ, new species.

Type.—Male; San Carlos, Costa Rica. (Schild and Burgdorf.) [Cat. No. 6953, U.S.N.M.]

Closely allied to *H. dohrnianus* Saussure and Zehntner^b from Guatemala, but differing in the more globose eyes, the truncate vertex (except for the supraocular processes), and in the more acuminate supra-anal plate.

Size medium; form slender. Head slightly transverse; eyes rotund-ovate when viewed laterally; vertex truncate, the juxtaocular lobes triangular, low; ocelli triangularly disposed, the median one very much exceeding the others in size; facial shield transverse, arcuate, the superior margin with the median portion truncate; antennæ slightly exceeding the pronotum in length, pilose. Pronotum slender, evenly tuberculate; collar gradually expanding into the supracoxal lobes which are not strongly marked; shaft subequal, a faint median carina present throughout the whole length; entire margins, except the narrow anterior and posterior ones, denticulate. Tegmina shorter than the wings when in repose; rather broad, subequal in width, apex rounded; costal margin closely hirsute through the entire length, sutural margin with shorter hairs; costal field moderately expanded in the basal half, entirely filled by large, irregular cells, the whole tegmina having the secondary nervures irregularly forked, the resulting cells being very unsymmetrical. Wings broad, almost subequal in width, apex with the costal margin curved backward and the posterior section obliquely truncate; all margins finely haired; anterior ulnar vein forked in the apical third. Abdomen slender, bacilliform. Supra-

^a As the original description did not mention any of the included species, they must be taken from the next work, which is the Biologia. Of the three there mentioned (*gryps*, *dohrnianus*, and *maja*), *gryps* is the only one figured and it may be selected as the type.

^b Biol. Cent.-Amer., Orth., I, p. 176.

anal plate acute triangular, tectate, the median ridge developed into a very distinct carina. Cerci sub-filiform, hirsute, slightly exceeding the subgenital plate in length. Subgenital plate produced, apex truncate, styles stout, short, and hirsute. Anterior coxae slender, about four-fifths the length of the pronotum; femora very slender, about equaling the pronotum in length, spines only on the distal half, external margin with five spines, one of which is apical and quite small, internal margin bearing eleven spines which, if reduced to a formula, would read from the apex posteriorly I III I I I I I, discoidal spines three in number, straight, the anterior one very long; tibiae very short and weak, with claw not exceeding one-third the length of the femora, external margin bearing four closely adpressed apical spines, internal margin bearing four small, short basal spines and four moderately long apical ones; metatarsi not quite equal to the following joints in length. Median and posterior limbs slender.

General color dull umber, mottled with an obscure ochraceous; wings hyaline, though infuscate with smoky brown, which tint is of greatest intensity at the apex, where a few small blotches of dull ochraceous are also visible; limbs dull ochraceous, obscurely annulate with dull chocolate brown.

MEASUREMENTS.

Length of body	mm.
Length of pronotum	32.5
Greatest width of pronotum	9
Length of tegmina	1.9
Greatest width of tegmina	20.5
Length of wings.....	5
	19.5

Genus SPANIONYX Saussure.

1892. *Spanionyx* SAUSSURE, Societas Entomologica, VII, p. 122.

Type.—As this case is much the same as *Harpagonyx*, we can select *S. bicornis* as the type.

SPANIONYX BIDENS Saussure and Zehntner.

1894. *Spanionyx bidens* SAUSSURE and ZEHNTNER, Biol. Cent.-Amer., Orth., I, p. 177, pl. x, figs. 1-3; Ruatan Island, Honduras.

One female; Turrialba, Costa Rica. (Schild and Burgdorf.)
[U.S.N.M.]

This specimen measures as follows:

Total length	mm.
Length of pronotum	53
Greatest width of pronotum	17
Length of anterior femora.....	2.5
Length of posterior femora.....	11
	9.6

Subfamily HARPAGINÆ.

Genus ACANTHOPS Serville.

1831. *Acanthops* SERVILLE, Ann. Sci. Nat., XXII, p. 53.

Type.—*Mantis fuscifolia* Olivier = *sinuata* Stoll.

ACANTHOPS TUBERCULATA Saussure.

1870. *A[canthops] tuberculata* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 243; Guiana.

One immature female; Tucurrique, Costa Rica. (Schild and Burgdorf.) [U.S.N.M.]

This species previously has only been recorded from Guiana. As the female is undescribed, I have made a few remarks on the specimen in hand.

Size rather large; form depressed, abdomen very broad. Head slightly longer than broad; eyes acute mammillate; vertex truncate; ocelli very small; facial shield transverse, slightly arcuate, the superior margin with the median section subtruncate; antennæ filiform, not exceeding half the length of the pronotum. Pronotum of moderate length, collar gradually expanding into the well-rounded supracoxal lobes; shaft with the median portion compressed; margins with no appreciable spines except on the shaft, the lateral margins of which bear short dentiform processes; dorsal surface with a pair of mammillate processes on the collar, and another pair on the supracoxal region. Tegmina and wings not developed. Abdomen very strongly depressed, the fourth and fifth segments developing subquadrate foliaceous processes from their lateral margins, those of the fourth segment being about three times the size of the appendages on the fifth segment. Supra-anal plate produced, rounded, the apex broadly and triangularly emarginate. Cerci strongly depressed, apex expanded and obscurely bilobate. Subgenital plate transverse, moderately produced, apex deeply and very narrowly cleft; styles very minute, stout. Anterior coxæ with both of the lower margins supplied with five denticles; femora equal to the pronotum in length, the superior face bearing a distinct carinate ridge for the greater part of its length; external face heavily granulate; external margin with seven short and stout spines, one of which is apical; internal margin bearing seventeen subequal spines, one of which is apical; discoidal spines three in number, distal one exceeding the others in size; tibiæ about equal to two-thirds the length of the femora, each lower margin supplied with a comb-like series of spines, which are of greatest length distally; the external margin bears about twenty-six in its series, the internal margin seventeen; metatarsi equal to the remaining tarsal joints in length. Posterior and median limbs short and stout; the femora depressed; the

tibiae with a narrow foliaceous ridge on the proximal half of their superior margin.

General color red-brown, becoming ochraceous on the anterior limbs; eyes amber; pronotum with the median portion of the shaft bearing on each side a lunule of velvety blackish brown.

MEASUREMENTS.

	mm.
Total length	38.5
Length of pronotum	12
Greatest width of pronotum.....	4.5
Length of anterior femora.....	11.5
Dilation of abdomen (including lateral appendages).....	17

Genus *PARACANTHOPS* Saussure (*Pseudocanthops* auct.).

1870. *Paracanthops* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 243.

Included species *cælebs* and *spinulosa* Saussure, of which the former may be considered the type.

PARACANTHOPS CÆLEBS (Saussure).

1869. *H[ymenopus] cælebs* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 73; Patria? Mexico.

One male; Bolivia. [A. N. S. Phila.]

This record very considerably extends the range of this species.

Subfamily VATTINÆ.

Genus *STAGMATOPTERA* Burmeister.

1838. *Stagmatoptera* BURMEISTER, Handb. d. Entom., II, p. 537.

Type.—By elimination and selection *S. rogatoria* Burmeister.^a

STAGMATOPTERA ROGATORIA Burmeister.

1838. *M[antis] (Stagmatoptera) rogatoria* BURMEISTER, Handb. d. Entom., II, p. 540; South America.

1870. *St[agmatoptera] predicatoria* SAUSSURE, Bull. Soc. Ent. Suisse, III, p. 232; Brazil.

One female; Pebas, Peru. [A. N. S. Phila.]

^aThe originally included species were:

lineola—*Epaphrodita*.

bioculata—*Sphodromantis*.

bimaculata—*Sphodromantis*.

musarum—*Epaphrodita*.

latipennis—*Stagnomantis*.

carolina—*Stagnomantis*.

dimidiata—*Stagnomantis*.

præcaria.

rogatoria.

pavonina.

unipunctata—*Parastagmatoptera*.

Of the uneliminated forms *rogatoria* may be selected as the type.

The specimen measures as follows:

	<i>mm.</i>
Length of body	80
Length of pronotum	31
Greatest width of pronotum.....	6.5
Length of tegmina.....	47
Greatest width of tegmina	18.5
Length of anterior femora.....	22.5

STAGMATOPTERA SANCTA (Stoll).

1787. [*Mantis*] *sancta* STOLL, Natuurlyke Afbeeldingen en Beschryvingen; De Spoken, pp. 52, 78, pl. xvii, fig. 63; Surinam.

One female; Para, Brazil. [A. N. S. Phila.]

STAGMATOPTERA INSATIABILIS, new species.

Type.—Female; Turrialba, Costa Rica. (Schild and Burgdorf.)
[Cat. No. 6954, U.S.N.M.]

This form is allied to *S. sancta* Stoll, but differs in the armature of the anterior coxæ, the character of the pronotal dilation, and the spine structure of the same portion of the body.

Size large; form robust, abdomen depressed. Head slightly transverse; eyes subovoid when viewed laterally; vertex very slightly arcuate; ocelli very small, triangularly disposed; facial shield transverse, the superior margin arcuate, lower margin subtruncate; antennæ filiform, hardly exceeding the depth of the head in length. Pronotum moderately elongate; collar broad, very gradually expanding into the slight supracoxal lobes; shaft subequal in width, supplied with a median carina which is very distinct anteriorly and obsolete posteriorly; lateral margins of the collar and shaft supplied with stout moderately long dentiform spines, which become weak and low toward the posterior margin of the shaft, lateral margins of the supracoxal lobes with the spines shorter than either anteriorly or posteriorly. Tegmina elliptical, costal margin rather strongly arcuate, sutural margin moderately arcuate, apex rounded anteriorly and rectangulate posteriorly; costal field broad, equal to one-third the width of the tegmina, irregularly reticulate; stigma longitudinal, narrow. Wings slightly exceeding the tegmina in length when in repose; costal margin straight, except apically, where it is strongly curved to meet the very obtuse-angulate apex; anterior ulnar vein bifurcate. Abdomen depressed, fusiform. Supraanal plate rotundate, a slightly marked cercal emargination. Cerci moniliform, hirsute, apex blunt. Subgenital plate large, rounded; median portion produced, compressed, and with a deep median incision. Anterior coxæ slightly exceeding half the length of the pronotum, lower margin bearing five large dentiform spinous processes, between which are placed a much smaller process of similar shape; femora slightly exceeding the coxæ in length, external face concave, anterior portion of the external margin bearing

four large spines, anterior portion of the internal margin bearing sixteen large and small spines which from the distal extremity read $I\bar{n}I\bar{n}I\bar{n}I\bar{n}I\bar{n}I\bar{n}$, discoidal spines four in number, the second one from the distal extremity larger than the others, posterior portion of the lower face of the femora bearing a row of seven small denticles; tibiae (without apical claw) not equal to half the length of the femora, external margin bearing twelve spines, the internal thirteen, the external with an unarmed basal area; metatarsi over half again as long as the remaining tarsal joints. Median and posterior limbs moderately slender; the metatarsi of the median limbs considerably shorter than the remaining tarsal joints; metatarsi of the posterior limbs equal to the remaining tarsal joints in length.

General color pea green, suffused with brown on the head, pronotum, and limbs; eyes rich sienna, darkest above; anterior limbs with the spines on the internal margin of the tibiae and the larger coxal spines red brown; wings hyaline with the costal margin, longitudinal veins and transverse nervures yellowish green; abdomen below margined with bluish green; median and posterior femora obscurely annulate with wood brown.

MEASUREMENTS.

	<i>mm.</i>
Total length	69
Length of pronotum.....	28.5
Greatest width of pronotum	6.2
Length of tegmina.....	34
Greatest width of tegmina	14
Length of wings.....	31

An additional female from the type locality was also examined.

Genus VATES Burmeister.

1838. *Vates* BURMEISTER, Handb. d. Entom., II, p. 543.

Type.—*Vates cnemidotus* Burmeister = *Mantis subfoliata* Stoll.^a

VATES TOWNSENDI, new species.

1901. *Vates* sp. REHN, Trans. Amer. Ent. Soc., XXVII, p. 221; Cuernavaca, Morelos, Mexico.

Type.—Female; Zapotlan, Jalisco, Mexico, July 8, 1902. (C. H. T. Townsend.) [A. N. S. Phila.]

This species agrees with *V. tollcea* Saussure and *V. annectens* Rehn in the rotundate emargination of the marginal field of the tegmina and the lobed abdomen, and shows affinity, on the other hand, with *V. parvensis* Saussure in the elongate frontal processes. The peculiar position of the species was recognized when an immature specimen from Cuernavaca was examined, but on such evidence I deferred

^aAccording to Rehn, *Canad. Entom.*, XXXIII, p. 24.

description. The receipt of an adult female, kindly presented by Mr. C. H. T. Townsend, clears all uncertainty, and I take pleasure in dedicating the species to the collector of the type.

Size rather large. Head transverse; frontal processes as long as the interspace between the eyes, apical portions curved upward and acuminate; eyes subreniform when viewed laterally; facial shield transverse, inferior margin subtruncate, superior margin obtuse-angulate with a rounded projecting median lobe. Pronotum elongate, the shaft trigonal in section; collar subequal; supracoxal lobes prominent subangulate; shaft slightly expanded posteriorly, as a whole narrower than the collar; median carina very fine, but distinct on the shaft, replaced on the collar by a slight sulcus; lateral margins denticulate, stronger on the collar than elsewhere, almost absent on the posterior portion of the shaft. Tegmina exceeding the abdomen in length; the costal field abruptly rotundate-emarginate and absent in the apical third. Abdomen depressed; posterior part of the lateral margins of the segments bearing rotundate lobes. Anterior coxæ about half the length of the pronotum; femora slightly more than half the length of the pronotum, external margin supplied with four large spines, internal margin with fifteen or sixteen spines rather regularly alternating large and small, discoidal spines four in number; metatarsi slightly longer than the remaining tarsal joints. Median and posterior femora with the usual foliaceous lobes well developed and rounded.

General color dull reddish brown, transversely barred with ochraceous on the limbs. Tegmina opaque pea-green, washed with faint yellowish, bearing two oblique transverse bars, as is customary in this genus.

MEASUREMENTS.

	<i>mm.</i>
Length of head and body	61.7
Length of frontal processes	3.5
Length of pronotum	26.2
Greatest width of pronotum	6.0
Length of tegmina	35.0
Greatest width of tegmina	11.0
Length of anterior femora	16.0